

(12)  $V = 10L$

$T = 348.2K$

$P = 2 \text{ atm}$



mi	0.6	
mv	-x	+2x
meq	0.6-x	2x
meq	0.5	0.2

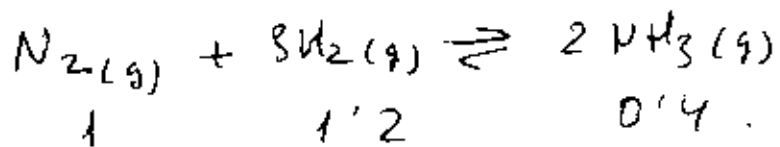
$n_T = \frac{2 \cdot 10}{0.082 \cdot 348.2} = 0.7$

$0.7 = 0.6 - x + 2x$ ;  $x = 0.1$

b)  $K_P = \frac{P_{NO_2}^2}{P_{N_2O_4}} = \frac{X_{NO_2}^2 \cdot P_T}{X_{N_2O_4} \cdot P_T}$ ;  $K_P = \frac{\left(\frac{0.5}{0.7}\right)^2 \cdot 2}{\frac{0.2}{0.7}} = 0.23$

(14)  $V = 2L$

$T = 725K$



a)  $P_{N_2} = \frac{1 \cdot 0.082 \cdot 725}{2} = 29.72 \text{ atm}$

$P_{H_2} = \frac{3 \cdot 0.082 \cdot 725}{2} = 85.67 \text{ atm}$

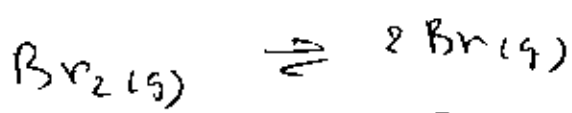
$P_{NH_3} = \frac{0.4 \cdot 0.082 \cdot 725}{2} = 11.89 \text{ atm}$

b)  $K_P = \frac{P_{NH_3}^2}{P_{N_2} \cdot P_{H_2}^3}$ ;  $K_P = \frac{11.89^2}{29.72 \cdot (85.67)^3} = 1.04 \cdot 10^{-4}$

(15)  $V = 0.5L$

$T = 873K$

$\alpha = 0.8$



mi	0.2	
mv	-x	+2x
meq	0.2-x	2x
meq	0.04	0.32

$0.8 = \frac{x}{0.2}$ ;  $x = 0.16$

$K_c = \frac{[Br]^2}{[Br_2]}$ ;  $K_c = \frac{\left(\frac{0.32}{0.5}\right)^2}{\left(\frac{0.04}{0.5}\right)} = 5.12$

$K_P = K_c \cdot (RT)^{-1}$ ;  $K_P = 5.12 \cdot 0.082 \cdot 873 = 360.3$